

TECHNICAL NOTES

2003 Revision of the U.S. Standard Certificate of Death

In 2003, Idaho, Montana, California, New York State and New York City implemented the 2003 revision of the U.S. Standard Certificate of Death. Certificates for Idaho and these areas were revised to meet the U.S. standards for data collection for multiple races and ethnic origins. Data for education was changed from number of years of education to education level. In addition, data collection began for tobacco use contributing to death, pregnancy status of females of child-bearing age, and safety device(s) used for transportation-injury deaths. Data were collected for these variables for deaths occurring in Idaho and the four other areas. Single race and ethnicity designations were recorded for Idaho resident deaths which occurred in states with non-revised certificates. Data collected on the other new questions were recorded as “unknown” for resident deaths which occurred in the states with non-revised certificates.

2003 Revision of the U.S. Standard Certificate of Live Birth

The U.S. Standard Certificate of Live Birth was revised in 2003. In 2003, Pennsylvania and Washington were the first two states to implement the 2003 revision. The remaining 48 states and the District of Columbia collected and reported birth data based on the 1989 revision of the U.S. Standard Certificate of Live birth. In 2003, there were 399 births delivered in Washington to Idaho resident mothers and none in Pennsylvania. The state of Washington provided copies of the Idaho resident birth certificates to Idaho Vital Records for statistical purposes. However, data collected in Washington were not 100 percent comparable with data collected in Idaho and other states using the 1989 U.S. Standard Certificate. Because of the differences, Idaho Vital Records made modifications during data entry to make data collected by Washington comparable with data collected by Idaho. Among statistics provided in this annual report, modifications were made to mother’s education, tobacco and alcohol use, onset of prenatal care, and APGAR scores.

Washington’s certificate collected data for mother’s education based on level of education, while Idaho collected data for number of years of school. Some levels of education have a direct association with years of school completed, such as “bachelor degree”, which was recorded as “16 years”. Education levels without a direct correlation with years of school, such as “9-12 years with no diploma” and “some college, no degree” were recorded as unknown. Mother’s education was recorded as “unknown” for 38 percent of births to Idaho residents in Washington.

There are four questions for tobacco use on the certificate used by Washington in 2003. The new questions ask for average number of cigarettes smoked per day during the three months prior to pregnancy, first trimester of pregnancy, second trimester of pregnancy, and third trimester of pregnancy. Idaho certificate includes the question “was tobacco used during pregnancy” and “average number of cigarettes per day”. For Washington certificates, if there were any number of cigarettes smoked during the first, second, or third trimester of pregnancy, then tobacco use was recorded as “yes”. The number of cigarettes per day was recorded as the highest number of cigarettes listed for the three trimesters. If zero cigarettes were listed for the three trimesters, tobacco use was recorded as “no”; if the three items were left blank, tobacco use was recorded as “unknown”.

Alcohol use and average number of drinks per week are not included on the 2003 U.S. Standard Certificate of Live Birth, and beginning in 2003, were no longer collected by Washington. Alcohol use and number of drinks for Idaho resident births in Washington were recorded as “unknown”.

Beginning in 2003, the questions regarding prenatal care on Washington’s certificate asked for date for first prenatal care visit, date for last prenatal care visit, and total number of visits. Idaho’s certificate asks for month prenatal care began and number of visits. For Idaho resident births in Washington, if the number of visits was zero, then month prenatal care began was recorded as “none”. Otherwise, month prenatal care began was recorded as “unknown”.

On the 2003 Standard Certificate used by Washington, one-minute APGAR score is no longer included on the certificate. Five-minute APGAR remains on the 2003 version, and if five-minute score is less than six, then ten-minute APGAR is also recorded. For Idaho resident births in Washington, APGAR score at one minute was recorded as “unknown” and five-minute APGAR score was recorded as the APGAR score listed on the certificate.

On January 1, 2004, Idaho implemented the 2003 revision of the U.S. Standard Certificate of Live Birth. The *2004 Idaho Vital Statistics* annual report will reflect the changes from using the 1989 revision to using the 2003 revision. Some states continued to use the 1989 revision of the U.S. Standard Certificate in 2004, and issues with comparable data will be addressed in the 2004 report.

Age-Adjusted Mortality Rates Standardized to the Year 2000 U.S. Standard

Age adjustment is a statistical technique used to standardize rates. The technique is employed when comparing two or more populations with different age distributions. Age-adjusted rates are artificial measures for comparison purposes only and should not be used to measure the absolute magnitude of a health issue. To allow for comparison, the same standard population must be used. If different standard populations are used to compute the age-adjusted rates (1940 and 2000, for example), then the age-adjusted rates are NOT comparable. Statistically, it is a weighted average of the age-specific death rates, where the weights represent the fixed population proportions by age.

Beginning with data (calendar) year 1999, the National Center for Health Statistics (NCHS) implemented a new standard for age-adjusted death rates. The new standard is based on year 2000 U.S. population, and it replaces the existing 1940 standard million population that has been widely used for over 50 years. The reasons for changing to the year 2000 standard are two-fold. One, although the 1940 standard was widely used, at least three different standards have been employed by federal and state agencies. The use of a single age-adjustment standard by federal agencies will help alleviate confusion and misunderstanding among data users. Two, the 1940 standard has been perceived as outdated and incompatible with the current and older age structure of the population.¹

The change in the population standard from 1940 to the year 2000 affects the magnitude of the age-adjusted rates. Rates based on the year 2000 standard will be larger than rates based on

1. "Age Standardization of Death Rates: Implementation of the Year 2000 Standard," National Vital Statistics Reports, National Center for Health Statistics, Vol. 47, Number 3, October 7, 1998.

the 1940 standard because the year 2000 standard gives more weight to death rates at the older age, where mortality is higher.

There are two methods for age-adjusting rates: direct and indirect. In this report, Idaho age-adjusted rates were developed using the following steps for the direct method:

- 1) Calculate **age-specific rates** for the 11 age groups used in the 2000 standard million: less than 1, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, and 85 and older.

$$\frac{(\text{Annual number of deaths in age group})}{(\text{Population of age group for corresponding year})}$$

- 2) Calculate **expected number of deaths** for each age group.

$$(\text{2000 U.S. standard million population of age group}) \times (\text{Age-specific rate})$$

- 3) Calculate **total expected number of deaths**.

$$(\text{Sum of expected deaths for all age groups})$$

- 4) Calculate **age-adjusted rate per 100,000 persons**.

$$\frac{(\text{Total expected deaths})}{(\text{Standard million})} \times 100,000$$

YEAR 2000 U.S. STANDARD POPULATION	
All ages	1,000,000
Under 1 year	13,818
1-4 years	55,317
5-14 years	145,565
15-24 years	138,646
25-34 years	135,573
35-44 years	162,613
45-54 years	134,834
55-64 years	87,247
65-74 years	66,037
75-84 years	44,842
85+ years	15,508

Cause-of-Death Classification

Mortality statistics are compiled in accordance with the World Health Organization (WHO) regulations, which specify that member nations, including the United States, classify and code causes of death in accordance with the International Statistical Classification of Diseases and Related Health Problems. The tenth revision of the International Classification of Diseases (ICD-10) was implemented in the United States beginning with deaths occurring in 1999 and replaces the ninth revision of the ICD (ICD-9), which was used from 1979 through 1998. Some changes from ICD-9 to ICD-10 include:

1. ICD-10 is far more detailed than ICD-9, with about 8,000 categories compared with 4,000 categories.
2. ICD-10 uses 4-digit alphanumeric codes, compared to 4-digit numeric codes in ICD-9.

3. Some cause-of-death titles have been changed, and conditions have been regrouped.
4. Some cause-of-death coding rules have been changed.

Comparability Ratio

The change from ICD-9 to ICD-10 may result in discontinuities in cause-of-death trends. These discontinuities are measured using comparability ratios. The National Center for Health Statistics developed comparability ratios to measure the level of agreement between classification systems for causes of death. Table 1 on pages 119-128 provides the List of 113 Selected Causes of Death used by NCHS to rank leading causes of deaths to persons aged 1 year and older. The cause-of-death ranking for infants is based on the categories in the List of 130 Selected Causes of Infant Death shown in Table 2 (pages 129-135). These lists include the title of the cause of death, ICD-10 code(s), the most comparable ICD-9 code(s), and the comparability ratio. Subcategories for some causes are also shown indented under the cause of death used to rank leading causes of death. These subcategories are not used to rank leading causes of death. In addition, category titles that begin with the words “other” and “all other” are not ranked to determine the leading causes of death.

The comparability ratio is the result of a study completed by the NCHS in which a sample of U.S. mortality records was coded by both the new (ICD-10) and the old revision (ICD-9) codes.

Comparability ratio:
$$\frac{\text{Number of deaths for a cause of death based on ICD-10 code(s)}}{\text{Number of deaths for a cause of death based on the most comparable ICD-9 code(s)}}$$

A comparability ratio of 1.00 indicates that the same number of deaths was assigned to a particular cause whether ICD-9 or ICD-10 was used. A comparability ratio of less than 1.00 indicates fewer deaths would be coded to the cause of death using ICD-10 compared with ICD-9, solely because of the revision of the ICD. For example, a ratio of 0.83 indicates there were 17 percent fewer deaths ($1.00 - 0.83$) for this cause because of the code revision. A comparability ratio of more than 1.00 indicates more deaths occurred from this cause using ICD-10 compared with ICD-9, only because of the implementation of ICD-10. A ratio of 1.19 indicates 19 percent more deaths (absolute difference of $1.00 - 1.19$) were attributed to the cause using ICD-10 than would have been using ICD-9.

Because ICD-10 is more detailed than ICD-9, and because of changes in the coding rules, the ICD-9 codes most comparable to ICD-10 codes may or may not be the ICD-9 codes used to categorize cause of death from 1979-1998. The ICD-9 codes most comparable to ICD-10 codes are called Modified ICD-9 codes. For example, from 1979-1998, the ICD-9 codes used for Diseases of the heart were 390-398, 402, and 404-429. To compare with ICD-10, the Modified ICD-9 codes for Diseases of the heart changed to 390-398, 402, 404, and 410-429. Other examples of causes of death that were modified are Major cardiovascular diseases, Ischemic heart disease, All other forms of chronic ischemic heart disease, Cerebrovascular diseases (stroke), Chronic lower respiratory diseases (formally called Chronic obstructive pulmonary disease), Other chronic lower respiratory diseases, and Accidents. For the complete list of Modified ICD-9 codes, refer to the List of 113 Selected Causes of Death in Table 1 in the Technical Notes of this report.

To show trends in data, NCHS has instructed states to treat ICD-10 as the standard and adjust statistics prior to 1999 using Modified ICD-9 codes and comparability ratios. **Therefore, mortality statistics provided in this report are NOT comparable to previously published**

mortality statistics based on ICD-9 codes. Idaho trend data using Modified ICD-9 codes and comparability ratios are available upon request.

For example, in 2003 there were 339 Idaho resident deaths from Influenza and pneumonia based on ICD-10 codes (J10-J18). In 1998, there were 374 deaths from Influenza and pneumonia, based on the ICD-9 codes (480-487). At first glance, one would conclude the number of Influenza and pneumonia deaths decreased 9.4 percent from 1998 to 2003. However, because of changes in coding rules for ICD, these two counts are not comparable. Beginning in 1999, a change in Rule 3, called the direct sequel rule, changed the way deaths are coded when pneumonia is listed as a condition leading to death. When pneumonia is listed on the death certificate with another cause of death, and it is obviously a direct consequence of that other cause, then the other cause is selected as the underlying cause of death. In ICD-10, this rule is applied more broadly than in ICD-9 and specifies many more causes for which pneumonia is considered a direct consequence. Thus, deaths classified as pneumonia in ICD-9 are classified in ICD-10 to many other causes.

The ICD-10 to ICD-9 comparability ratio for Influenza and pneumonia is 0.6974. In other words, the counts and rates for Influenza and pneumonia were expected to decrease 30 percent beginning in 1999 only because of the introduction of ICD-10. To compare the number of Influenza and pneumonia deaths in 1998 with the number of deaths in 2003, multiply 1998 data based on Modified ICD-9 codes by the comparability ratio.

Number of deaths in 1998 based on Modified ICD-9 Codes (not comparable with 1999-2003 data)	X	Comparability Ratio	=	Number of deaths in 1998, comparable with number of deaths each year from 1999-2003 (rounded)	Number of deaths in 2003
374		0.6974		261	339

The number of influenza and pneumonia deaths increased 29.9 percent from 1998 to 2003.

Life Expectancy

Data used to calculate Idaho life expectancy are based on July 1, 2003, population estimates from the U.S. Bureau of the Census, age-specific population estimates computed by the Bureau of Health Policy and Vital Statistics, and 2001 Idaho resident mortality rates. Average number of years of life remaining (oe_x) is the expectation of life for those who survived to age x.

$${}^oe_x = T_x / l_x$$

T_x is the total time lived beyond age x by all individuals of the life table proportion alive at age x; l_x is the number of persons who survive to the exact age marking the beginning of each age interval. The number alive at age 0 (l_0) is taken arbitrarily as 100,000.

Population by Race

The Office of Management and Budget announced revisions to the standards for classification of federal data on race and ethnicity on October 30, 1997. These standards require that agencies offer individuals the opportunity to select one or more races when reporting information on race in federal data collections. Census 2000 was the first nationwide implementation of the revised standards.

The files released from the U.S. Census Bureau contain data for single race categories (including "Other race" category) and multiple race categories. This presents problems for vital rates from two standpoints: first, the file contains counts of persons with more than one race and therefore, is not compatible with vital statistics numerators; second, the file contains the "Other race" category that is not used to calculate vital statistics rates.

NCHS contracted with the Census Bureau to produce a "bridged" data set in which all multiple race persons are allocated to a single race, to reproduce what these people would have reported had they not had the option to report more than one race. In August 2004, NCHS released state population estimates for July 1, 2003 and revised populations for July 1, 2001 and July 1 2002. These estimates are for the four race groups (White, Black, American Indian or Alaska Native, Asian or Pacific Islander (including Native Hawaiian)) by single year of age, sex, and Hispanic origin.

Standard Race Categories April 1, 2000 Census for Idaho		
Race	Number	Percent
Total	1,293,953	100.0%
White	1,177,304	91.0%
Black	5,456	0.4%
American Indian/Alaskan Native	17,645	1.4%
Asian	11,889	0.9%
Native Hawaiian/Pacific Islander	1,308	0.1%
Other race	54,742	4.2%
Two or more races	25,609	2.0%

Standard Race Categories Idaho Bridged Postcensal 2001, 2002 and 2003 Estimates						
	July 1, 2001		July 1, 2002		July 1, 2003	
Race	Number	Percent	Number	Percent	Number	Percent
Total	1,321,309	100.0%	1,343,124	100.0%	1,366,332	100.0%
White	1,275,684	96.5%	1,295,362	96.4%	1,316,780	96.4%
Black	8,287	0.6%	9,051	0.7%	9,764	0.7%
American Indian/ Alaskan Native	20,987	1.6%	21,388	1.6%	21,760	1.6%
Asian/Pacific Islander	16,351	1.2%	17,323	1.3%	18,028	1.3%

Years of Potential Life Lost (YPLL)

Years of potential life lost (YPLL) is a statistic used to measure the number of years of life lost in a population when persons in that population die prematurely. YPLL provides valuable information regarding the causes of death that contribute most significantly to premature mortality. For example, in 2003, Accidents was the fifth-leading cause of death of Idahoans and accounted for 5.8 percent of all resident deaths. However, Accidents was the second leading cause of premature death under age 75 and accounted for 19.2 percent of all YPLL in 2003.

In order to calculate YPLL, a standard must be chosen (e.g., age 75) as a reference point for years of life lost. The number of years of life lost is then calculated for each person dying before the standard age. Assume a standard of 75 years of age is chosen. For calculation purposes, all people are considered half way through the year of their age at death. For example, an infant who dies under one year of age is considered .5 years of age at death, and a child who dies at age one - between its first and second birthday - is considered 1.5 years of age, and so forth. Therefore, a person dying at 39 has lost 35.5 years of life relative to the standard (i.e., 75 years – 39.5 years = 35.5 years). To obtain YPLL, the number of years of life lost for each person in the population dying before the standard age is summed. Persons dying at 75 years of age or older would be excluded from the analysis, because they have not lost years of life relative to the standard. For this report, a standard of 75 years of age was chosen to calculate YPLL.

Table 1
LIST OF 113 SELECTED CAUSES OF DEATH BASED ON ICD-10 CODES
AND THE LIST OF 72 SELECTED CAUSES OF DEATH BASED ON ICD-9 CODES
Cause of Death, ICD-10 Codes, ICD-9 Codes, Modified ICD-9 Codes, and Comparability Ratios¹

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Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
# Salmonella infections	A01-A02			002-003	0.8966
# Shigellosis and amebiasis	A03, A06	# Shigellosis and amebiasis	004, 006	004,006	NA
Certain other intestinal infections	A04, A07-A09	Certain other intestinal infections	007-009	007-009	0.86
# Tuberculosis	A16-A19	# Tuberculosis	010-018	010-018	0.8809
- Respiratory tuberculosis	A16	- Tuberculosis of respiratory system	010-012	010-012	0.9397
- Other tuberculosis	A17-A19	- Other tuberculosis	013-018	013-018	0.6955
# Whooping cough	A37	# Whooping cough	033	033	NA
# Scarlet fever and erysipelas	A38, A46	# Streptococcal sore throat, scarlatina, and erysipelas	034-035	034.1-035	NA
# Meningococcal infection	A39	# Meningococcal infection	036	036	0.9896
# Septicemia	A40-A41	# Septicemia	038	038	1.1900
# Syphilis	A50-A53	# Syphilis	090-097	090-097	0.7808
# Acute poliomyelitis	A80	# Acute poliomyelitis	045	045	NA
# Arthropod-borne viral encephalitis	A83-A84, A85.2			062-064	NA
# Measles	B05	# Measles	055	055	NA
# Viral hepatitis	B15-B19	# Viral hepatitis	070	070	0.7145
# Human immunodeficiency virus (HIV) disease	B20-B24	# Human immunodeficiency virus (HIV) infection	042-044	042-044	1.0821
# Malaria	B50-B54			084	NA
Other and unspecified infectious and parasitic diseases and their sequelae	A00, A05, A20-A36, A42-A44, A48-A49, A54-A79, A81-A82, A85.0-A85.1, A85.8, A86-B04, B06-B09, B25-B49, B55-B99	All other infectious and parasitic diseases	001-003, 005, 020- 032, 037, 039-041, 046-054, 056-066, 071-088, 098-139	001, 005, 020-032 037, 039-041, 046- 054, 056-061, 065- 066, 071-083, 085- 088, 098-134, 136- 139, 771.3	0.9105

1. Comparability ratios published May 3, 2004.

NA - ICD-9 codes or comparability ratio not available or figure does not meet standards of reliability or precision. If the numerator or denominator of the ratio had less than 20 deaths in the U.S., the ratio was not presented. In addition, ratios may be suppressed for causes of deaths for which there were large-scale erroneous shifts of deaths from or to a particular cause.

Causes of death unique to the ICD-10 list of 113 selected causes of death are **bolded**. The corresponding titles and ICD-9 codes used from 1979-1998 were not added to the ICD-9 list of 72 selected causes of death. The corresponding modified ICD-9 codes and comparability ratios are shown if available.

ICD-9 codes used from 1979-1998 that were modified to be more comparable to ICD-10 are **bolded** in the Modified ICD-9 Codes column.

Table 1 (continued)
LIST OF 113 SELECTED CAUSES OF DEATH BASED ON ICD-10 CODES
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Cause of Death, ICD-10 Codes, ICD-9 Codes, Modified ICD-9 Codes, and Comparability Ratios¹

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Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
# Malignant neoplasms	C00-C97	# Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140-208	140-208	1.0093
- Malignant neoplasms of lip, oral cavity and pharynx	C00-C14	- Malignant neoplasms of lip, oral cavity and pharynx	140-149	140-149	0.9597
		- Malignant neoplasms of digestive organs and peritoneum	150-159	NA	NA
- Malignant neoplasm of esophagus	C15			150	0.9946
- Malignant neoplasm of stomach	C16			151	1.0070
- Malignant neoplasms of colon, rectum and anus	C18-C21			153-154	0.9988
- Malignant neoplasms of liver and intrahepatic bile ducts	C22			155	0.9640
- Malignant neoplasm of pancreas	C25			157	0.9971
		- Malignant neoplasms of respiratory and intrathoracic organs	160-165	NA	NA
- Malignant neoplasm of larynx	C32			161	1.0051
- Malignant neoplasms of trachea, bronchus and lung	C33-C34			162	0.9844
- Malignant melanoma of skin	C43			172	0.9494
- Malignant neoplasm of breast	C50	- Malignant neoplasm of breast	174-175	174-175	1.0073
		- Malignant neoplasms of genital organs	179-187	NA	NA
- Malignant neoplasm of cervix uteri	C53			180	0.9963
- Malignant neoplasms of corpus uteri and uterus, part unspecified	C54-C55			179, 182	1.0242
- Malignant neoplasm of ovary	C56			183.0	0.9938

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Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
- Malignant neoplasm of prostate	C61			185	1.0144
		- Malignant neoplasms of urinary organs	188-189	NA	NA
- Malignant neoplasms of kidney and renal pelvis	C64-C65			189.0, 189.1	0.9964
- Malignant neoplasm of bladder	C67			188	0.9951
		- Malignant neoplasms of all other and unspecified sites	170-173, 190-199	NA	NA
- Malignant neoplasms of meninges, brain and other parts of central nervous system	C70-C72			191-192	0.9774
- Malignant neoplasms of lymphoid, hematopoietic and related tissue	C81-C96			200-208	1.0044
-- Hodgkin's disease	C81			201	1.0028
-- Non-Hodgkin's lymphoma	C82-C85			200, 202	0.9787
- Leukemia	C91-C95	- Leukemia	204-208	204-208	1.0104
		- Other malignant neoplasms of lymphatic and hematopoietic tissues	200-203	NA	NA
- Multiple myeloma and immunoproliferative neoplasms	C88, C90			203	1.0432
- Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue	C96			NA	NA
- All other and unspecified malignant neoplasms	C17, C23-C24, C26-C31, C37-C41, C44-C49, C51-C52, C57-C60, C62-C63, C66, C68-C69, C73-C80, C97			152, 156, 158-160, 163-171, 173, 181, 183.2-184, 186-187, 189.2-190, 193-199	1.1377

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Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
# In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior	D00-D48	# Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature	210-239	210-239	1.6315
# Anemias	D50-D64	# Anemias	280-285	280-285	0.9430
# Diabetes mellitus	E10-E14	# Diabetes mellitus	250	250	1.0193
# Nutritional deficiencies	E40-E64	# Nutritional deficiencies	260-269	260-269	1.0438
- Malnutrition	E40-E46			260-263	1.0080
- Other nutritional deficiencies	E50-E64			264-269	1.7778
# Meningitis	G00, G03	# Meningitis	320-322	320-322	1.0121
# Parkinson's disease	G20-G21			332	1.0101
# Alzheimer's disease	G30	# Alzheimer's disease	331.0	331.0	1.5812
Major cardiovascular diseases	I00-I78	Major cardiovascular diseases	390-448	390-434, 436-448	0.9963
- # Diseases of heart	I00-I09, I11, I13, I20-I51	- # Diseases of heart	390-398, 402, 404-429	390-398, 402, 404, 410-429	0.9852
-- Acute rheumatic fever and chronic rheumatic heart disease	I00-I09	-- Rheumatic fever and rheumatic heart disease	390-398	390-398	0.8816
-- Hypertensive heart disease	I11	-- Hypertensive heart disease	402	402	0.7985
-- Hypertensive heart and renal disease	I13	-- Hypertensive heart and renal disease	404	404	1.1269
-- Ischemic heart diseases	I20-I25	-- Ischemic heart diseases	410-414	410-414, 429.2	1.0006
--- Acute myocardial infarction	I21-I22	--- Acute myocardial infarction	410	410	0.9856
--- Other acute ischemic heart diseases	I24	--- Other acute and subacute forms of ischemic heart disease	411	411	1.0723
		--- Angina pectoris	413	NA	NA
--- Other forms of chronic ischemic heart disease	I20, I25			412-414, 429.2	1.0098

1. Comparability ratios published May 3, 2004.

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Table 1 (continued)
LIST OF 113 SELECTED CAUSES OF DEATH BASED ON ICD-10 CODES
AND THE LIST OF 72 SELECTED CAUSES OF DEATH BASED ON ICD-9 CODES
Cause of Death, ICD-10 Codes, ICD-9 Codes, Modified ICD-9 Codes, and Comparability Ratios¹

LIST OF 113 SELECTED CAUSES OF DEATH (ICD-10) (Causes designated by the # symbol are ranked to determine leading causes of death)		LIST OF 72 SELECTED CAUSES OF DEATH (ICD-9) (Causes designated by the # symbol are ranked to determine the leading causes of death).			COMPARABILITY RATIO ICD-10 to ICD-9
Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
---- Atherosclerotic cardiovascular disease, so described	I25.0			429.2	1.0599
---- All other forms of chronic ischemic heart disease	I20, I25.1-I25.9	--- Old myocardial infarction and other forms of chronic ischemic heart disease	412, 414	412-414	0.9966
- Other heart diseases	I26-I51			415-429.1, 429.3-429.9	0.9634
-- Acute and subacute endocarditis	I33			421	1.0310
-- Diseases of pericardium and acute myocarditis	I30-I31, I40			420, 422-423	1.0504
-- Heart failure	I50			428	1.0388
		-- Other diseases of endocardium	424	NA	NA
-- All other forms of heart disease	I26-I28, I34-I38, I42-I49, I51	-- All other forms of heart disease	415-423, 425-429	415-417, 424-427, 429.0-429.1, 429.3-429.9	0.9288
- # Essential (primary) hypertension and hypertensive renal disease	I10, I12	- # Hypertension with or without renal disease	401, 403	401, 403	1.1162
- # Cerebrovascular diseases	I60-I69	- # Cerebrovascular diseases	430-438	430-434, 436-438	1.0502
		-- Intracerebral and other intracranial hemorrhage	431-432	NA	NA
		-- Cerebral thrombosis and unspecified occlusion of cerebral arteries	434.0, 434.9	NA	NA
		-- Cerebral embolism	434.1	NA	NA
		-- All other and late effects of cerebrovascular diseases	430, 433, 435-438	NA	NA
- # Atherosclerosis	I70	- # Atherosclerosis	440	440	0.9658
- Other diseases of circulatory system	I71-I78	- Other diseases of arteries, arterioles, and capillaries	441-448	441-448	0.9409

1. Comparability ratios published May 3, 2004.

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Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
-- Aortic aneurysm and dissection	I71			441	1.0006
-- Other diseases of arteries, arterioles and capillaries	I72-I78			442-448	0.8499
Other disorders of circulatory system	I80-I99			451-459	0.9758
# Influenza and pneumonia	J10-J18	# Pneumonia and influenza	480-487	480-487	0.6974
- Influenza	J10-J11	- Influenza	487	487	1.0000
- Pneumonia	J12-J18	- Pneumonia	480-486	480-486	0.6947
Other acute lower respiratory infections	J20-J22			466	0.9726
- Acute bronchitis and bronchiolitis	J20-J21	# Acute bronchitis and bronchiolitis	466	466	0.7215
- Unspecified acute lower respiratory infection	J22			NA	NA
# Chronic lower respiratory diseases	J40-J47	# Chronic obstructive pulmonary diseases and allied conditions (COPD)	490-496	490-494, 496	1.0411
- Bronchitis, chronic and unspecified	J40-J42	- Bronchitis, chronic and unspecified	490-491	490-491	0.3860
- Emphysema	J43	- Emphysema	492	492	0.9617
- Asthma	J45-J46	- Asthma	493	493	0.8855
- Other chronic lower respiratory diseases	J44, J47	- Other chronic obstructive pulmonary diseases and allied conditions	494-496	494, 496	1.0951
# Pneumoconioses and chemical effects	J60-J66, J68			500-506	1.0167
# Pneumonitis due to solids and liquids	J69			507	1.1046
Other diseases of respiratory system	J00-J06, J30-J39, J67, J70-J98			034.0, 460-465, 470-478, 495, 508-519	1.1104
# Peptic ulcer	K25-K28	# Ulcer of stomach and duodenum	531-533	531-534	0.9711
# Diseases of appendix	K35-K38	# Appendicitis	540-543	540-543	0.9739

1. Comparability ratios published May 3, 2004.

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LIST OF 113 SELECTED CAUSES OF DEATH BASED ON ICD-10 CODES
AND THE LIST OF 72 SELECTED CAUSES OF DEATH BASED ON ICD-9 CODES
Cause of Death, ICD-10 Codes, ICD-9 Codes, Modified ICD-9 Codes, and Comparability Ratios¹

LIST OF 113 SELECTED CAUSES OF DEATH (ICD-10) (Causes designated by the # symbol are ranked to determine leading causes of death)		LIST OF 72 SELECTED CAUSES OF DEATH (ICD-9) (Causes designated by the # symbol are ranked to determine the leading causes of death).			COMPARABILITY RATIO ICD-10 to ICD-9
Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
# Hernia	K40-K46	# Hernia of abdominal cavity and intestinal obstruction		550-553	1.0122
# Chronic liver disease and cirrhosis	K70, K73-K74	# Chronic liver disease and cirrhosis		571	1.0321
- Alcoholic liver disease	K70			571.0-571.3	1.0008
- Other chronic liver disease and cirrhosis	K73-K74			571.4-571.9	1.0612
# Cholelithiasis and other disorders of gall-bladder	K80-K82	# Cholelithiasis and other disorders of gall-bladder	574-575	574-575	0.9609
# Nephritis, nephrotic syndrome and nephrosis	N00-N07, N17-N19, N25-N27	# Nephritis, nephrotic syndrome and nephrosis	580-589	580-589	1.2555
- Acute and rapidly progressive nephritic and nephrotic syndrome	N00-N01, N04	- Acute glomerulonephritis and nephrotic syndrome	580-581	580-581	0.6500
- Chronic glomerulonephritis, nephritis and nephritis not specified as acute or chronic, and renal sclerosis, unspecified	N02-N03, N05-N07, N26	- Chronic glomerulonephritis, nephritis and nephropathy, not specified as acute or chronic, and renal sclerosis, unspecified	582-583, 587	582-583, 587	0.4113
		- Renal failure, disorders resulting from impaired renal function, and small kidney of unknown cause	584-586, 588-589	NA	NA
- Renal failure	N17-N19			584-586	1.3268
- Other disorders of kidney	N25, N27			588-589	0.8571
# Infections of kidney	N10-N12, N13.6, N15.1	# Infections of kidney	590	590	1.0226
# Hyperplasia of prostate	N40	# Hyperplasia of prostate	600	600	1.0154
# Inflammatory diseases of female pelvic organs	N70-N76			614-616	0.8929
# Pregnancy, childbirth and the puerperium	O00-O99	# Complications of pregnancy, childbirth, and the puerperium		630-676	1.1404
- Pregnancy with abortive outcome	O00-O07	- Pregnancy with abortive outcome	630-638	630-639	1.0513

1. Comparability ratios published May 3, 2004.

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Causes of death unique to the ICD-10 list of 113 selected causes of death are **bolded**. The corresponding titles and ICD-9 codes used from 1979-1998 were not added to the ICD-9 list of 72 selected causes of death. The corresponding modified ICD-9 codes and comparability ratios are shown if available.

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Table 1 (continued)
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Cause of Death, ICD-10 Codes, ICD-9 Codes, Modified ICD-9 Codes, and Comparability Ratios¹

LIST OF 113 SELECTED CAUSES OF DEATH (ICD-10) (Causes designated by the # symbol are ranked to determine leading causes of death)		LIST OF 72 SELECTED CAUSES OF DEATH (ICD-9) (Causes designated by the # symbol are ranked to determine the leading causes of death).			COMPARABILITY RATIO ICD-10 to ICD-9
Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
- Other complications of pregnancy, child-birth and the puerperium	O10-O99	- Other complications of pregnancy, child-birth and the puerperium	640-676	640-676	1.1545
# Certain conditions originating in the perinatal period	P00-P96	# Certain conditions originating in the perinatal period	760-779	760-771.2, 771.4-779	1.0756
		- Birth trauma, intrauterine hypoxia, birth asphyxia, and respiratory distress syndrome	767-769	NA	NA
		- Other conditions originating in the perinatal period	760-766, 770-779	NA	NA
# Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99	# Congenital anomalies	740-759	740-759	0.8956
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R99	Symptoms, signs, and ill-defined conditions	780-799	780-799	0.9753
All other diseases (residual)	See footnote 3	All other diseases (residual)		See footnote 4	0.9139
# Accidents (unintentional injuries)	V01-X59, Y85-Y86	# Accidents and adverse effects	E800-E949	E800-E869, E880-E929	1.0251
- Transport accidents	V01-V99, Y85			E800-E848, E929.0, E929.1	0.9942
-- Motor vehicle accidents ²	See footnote 5	- Motor vehicle accidents	E810-E825	E810-E825	0.9527
		- All other accidents and adverse effects	E800-E807, E826-E949	NA	NA

1. Comparability ratios published May 3, 2004.

2. Comparability ratio for cause of death changed since preliminary comparability ratios were released.

3. ICD-10 codes for all other diseases (residual): D65-E07, E15-E34, E65-F99, G04-G12, G23-G25, G31-H93, K00-K22, K29-K31, K50-K66, K71-K72, K75-K76, K83-M99, N13.0-N13.5, N13.7-N13.9, N14, N15.0, N15.8-N15.9, N20-N23, N28-N39, N41-B362N64, N80-N98.

4. Modified ICD-9 codes for all other diseases (residual): 135, 240-246, 251-259, 270-279, 286-319, 323-330, 331.1-331.9, 333-389, 435, 520-530, 535-537, 555-570, 572-573, 576-579, 591-599, 601-611, 617-629, 680-739.

5. ICD-10 codes for motor vehicle accidents: V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2.

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Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
-- Other land transport accidents	See footnote 2			E800-E807, E826-E829	3.5802
-- Water, air and space, and other and unspecified transport accidents and their sequelae	V90-V99, Y85			E830-E848, E929.0, E929.1	0.9510
- Nontransport accidents	W00-X59, Y86			E850-E869, E880-E928, E929.2-E929.9	1.0602
-- Falls	W00-W19			E880-E888	0.7720
-- Accidental discharge of firearms	W32-W34			E922	1.0165
-- Accidental drowning and submersion	W65-W74			E910	1.0297
-- Accidental exposure to smoke, fire and flames	X00-X09			E890-E899	0.9995
-- Accidental poisoning and exposure to noxious substances	X40-X49			E850-E869, E924.1	1.0356
-- Other and unspecified nontransport accidents and their sequelae	W20-W31, W35-W64, W75-W99, X10-X39, X50-X59, Y86			E900-E909, E911-E921, E923-E924.0, E924.8-E928, E929.2-E929.9	1.4923
# Intentional self-harm (suicide) ³	U03, X60-X84, Y87.0	# Suicide	E950-E959	E950-E959	1.0022
- Intentional self-harm (suicide) by discharge of firearms	X72-X74			E955.0-E955.4	1.0012
- Intentional self-harm (suicide) by other and unspecified means and their sequelae ⁴	U03, X60-X71, X75-X84, Y87.0			E950-E954, E955.5-E959	1.0038
# Assault (homicide) ⁴	U01-U02, X85-Y09, Y87.1	# Homicide and legal intervention	E960-E978	E960-E969	1.0020

1. Comparability ratios published May 3, 2004.

2. ICD-10 codes for other land transport accidents: V01, V05-V06, V09.1, V09.3-V09.9, V10-V11, V15-V18, V19.3, V19.8-V19.9, V80.0-V80.2, V80.6-V80.9, V81.2-V81.9, V82.2-V82.9, V87.9, V88.9, V89.1, V89.3, V89.9.

3. ICD-10 codes U01-U03 are codes for Terrorism deaths beginning in data year 2001.

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Cause of Death	ICD-10 Codes	Cause of Death	ICD-9 Codes Used From 1979-1998	Modified ICD-9 Codes	
- Assault (homicide) by discharge of firearms ²	U01.4, X93-X95			E965.0-E965.4	1.0019
- Assault (homicide) by other and unspecified means and their sequelae ²	U01.0-U01.3, U01.5- U01.9, U02, X85-X92, X96-Y09, Y87.1			E960-E964, E965.5- E969	1.0022
# Legal intervention	Y35, Y89.0			E970-E978	0.9360
Events of undetermined intent	Y10-Y34, Y87.2, Y89.9	All other external causes	E980-E999	E980-E989	0.9867
- Discharge of firearms, undetermined intent	Y22-Y24			E985.0-E985.4	1.0000
- Other and unspecified events of un- determined intent and their sequelae	Y10-Y21, Y25-Y34, Y87.2, Y89.9			E980-E984, E985.5- E989	0.9855
# Operations of war and their sequelae	Y36, Y89.1			E990-E999	NA
# Complications of medical and surgical care	Y40-Y84, Y88			E870-E879, E930-E949	0.6304

1. Comparability ratios published May 3, 2004.

2. ICD-10 codes U01-U03 are codes for Terrorism deaths which were added beginning in data year 2001.

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Table 2
LIST OF 130 SELECTED CAUSES OF INFANT DEATH
Cause of Death, ICD-10 Codes, Modified ICD-9 Codes, and Comparability Ratios

CAUSE OF INFANT DEATH	ICD-10 CODES	MODIFIED ICD-9 CODES (MOST COMPARABLE TO ICD-10 CODES)	COMPARABILITY RATIO ¹
Certain infectious and parasitic diseases	A00-B99	001-033, 034.1-134, 136-139, 771.3	0.7174
- Certain intestinal infectious diseases	A00-A08	001-008	NA
- # Diarrhea and gastroenteritis of infectious origin	A09	009	NA
- # Tuberculosis	A16-A19	010-018	NA
- # Tetanus	A33, A35	037, 771.3	NA
- # Diphtheria	A36	032	NA
- # Whooping cough	A37	033	NA
- # Meningococcal infection	A39	036	0.9730
- # Septicemia	A40-A41	038	1.2071
- # Congenital syphilis	A50	090	NA
- # Gonococcal infection	A54	098	NA
- Viral diseases	A80-B34	042-079	1.0787
-- # Acute poliomyelitis	A80	045	NA
-- # Varicella (chickenpox)	B01	052	NA
-- # Measles	B05	055	NA
-- # Human immunodeficiency virus (HIV) disease	B20-B24	042-044	0.9737
-- # Mumps	B26	072	NA
-- Other and unspecified viral diseases	A81-B00, B02-B04, B06-B19, B25, B27-B34	046-051, 053-054, 056-071, 073-079	1.1325
- # Candidiasis	B37	112	0.6875
- # Malaria	B50-B54	084	NA
- # Pneumocystosis	B59	136.3	NA
- All other and unspecified infectious and parasitic diseases	A20-A32, A38, A42-A49, A51-A53, A55-A79, B35-B36, B38-B49, B55-B58, B60-B99	020-031, 034.1-035, 039-041, 080-083, 085-088, 091-097, 099-111, 114-134, 136.0-136.2, 136.4-139	0.5000

1. Comparability ratio ICD-10 codes to ICD-9 codes. Comparability ratios published May 3, 2004.

NA - Comparability ratio not available or figure does not meet standards of reliability or precision.

Note: Causes designated by the # symbol are ranked to determine leading causes of infant death.

Table 2 (continued)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH
Cause of Death, ICD-10 Codes, Modified ICD-9 Codes, and Comparability Ratios

CAUSE OF INFANT DEATH	ICD-10 CODES	MODIFIED ICD-9 CODES (MOST COMPARABLE TO ICD-10 CODES)	COMPARABILITY RATIO ¹
Neoplasms	C00-D48	140-239	1.0205
- # Malignant neoplasms	C00-C97	140-208	1.0814
-- Hodgkin's disease and non-Hodgkin's lymphomas	C81-C85	200-202	NA
-- Leukemia	C91-C95	204-208	1.0313
-- Other and unspecified malignant neoplasms	C00-C80, C88-C90, C96-C97	140-199, 203	1.0943
- # In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior	D00-D48	210-239	0.9333
# Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	D50-D89	135, 279-289	0.8857
- Anemias	D50-D64	280-285	0.5333
- Other diseases of blood and blood-forming organs	D65-D76	286-289	1.0208
- Certain disorders involving the immune mechanism	D80-D89	135, 279	1.0370
Endocrine, nutritional, and metabolic diseases	E00-E88	240-278	0.9148
- # Short stature, not elsewhere classified	E34.3	259.4	0.6333
- # Malnutrition and other nutritional deficiencies	E40-E64	260-269	0.7273
- # Cystic fibrosis	E84	277.0	1.1429
- # Volume depletion, disorders of fluid, electrolyte and acid- # base balance	E86-E87	276	0.7126
- All other endocrine, nutritional and metabolic diseases	E00-E32, E34.0-E34.2, E34.4-E34.9, E65-E83, E85, E88	240-259.3, 259.8-259.9, 270-275, 277.1-278	1.1111
Diseases of the nervous system	G00-G98	320-359, 435	1.0287
- # Meningitis	G00, G03	320-322	1.0400
- # Infantile spinal muscular atrophy, type I (Werdnig- # Hoffman)	G12.0	335.0	1.0000
- # Infantile cerebral palsy	G80	343	NA
- # Anoxic brain damage, not elsewhere classified	G93.1	348.1	0.8542
- Other diseases of nervous system	G04, G06-G11, G12.1-G12.9, G20-G72, G81-G92, G93.0, G93.2-G93.9, G95-G98	323-334, 335.1-342, 344-348.0, 348.2-359, 435	1.1045
# Diseases of the ear and mastoid process	H60-H93	380-389	NA

1. Comparability ratio ICD-10 codes to ICD-9 codes. Comparability ratios published May 3, 2004.

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Table 2 (continued)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH
Cause of Death, ICD-10 Codes, Modified ICD-9 Codes, and Comparability Ratios

CAUSE OF INFANT DEATH	ICD-10 CODES	MODIFIED ICD-9 CODES (MOST COMPARABLE TO ICD-10 CODES)	COMPARABILITY RATIO ¹
# Diseases of the circulatory system	I00-I99	390-434, 436-459	0.6595
- Pulmonary heart disease and diseases of pulmonary circulation	I26-I28	415-417	0.8265
- Pericarditis, endocarditis and myocarditis	I30, I33, I40	420-422	NA
- Cardiomyopathy	I42	425	0.9370
- Cardiac arrest	I46	427.5	0.4146
- Cerebrovascular diseases	I60-I69	430-434, 436-438	0.3593
- All other diseases of circulatory system	I00-I25, I31, I34-I38, I44-I45, I47-I51, I70-I99	390-414, 423-424, 426-427.4, 427.6-429, 440-459	0.7650
Disease of the respiratory system	J00-J98	034.0, 460-519	0.7922
- # Acute upper respiratory infections	J00-J06	034.0, 460-465	NA
- Influenza and pneumonia	J10-J18	480-487	0.7261
-- Influenza	J10-J11	487	NA
-- Pneumonia	J12-J18	480-486	0.7236
- # Acute bronchitis and acute bronchiolitis	J20-J21	466	0.8852
- # Bronchitis, chronic and unspecified	J40-J42	490-491	0.8148
- # Asthma	J45-J46	493	NA
- # Pneumonitis due to solids and liquids	J69	507	NA
- Other and unspecified diseases of respiratory system	J22, J30-J39, J43-J44, J47-J68, J70-J98	470-479, 492, 494-506, 508-519	0.9079
Diseases of the digestive system	K00-K92	520-579	1.4109
- # Gastritis, duodenitis, and noninfective enteritis and colitis	K29, K50-K55	535, 555-558	2.6538
- # Hernia of abdominal cavity and intestinal obstruction without hernia	K40-K46, K56	550-553, 560	1.2174
- All other and unspecified diseases of digestive system	K00-K28, K30-K38, K57-K92	520-534, 536-543, 562-579	0.9950
Diseases of the genitourinary system	N00-N95	580-629	0.9883
- # Renal failure and other disorders of kidney	N17-N19, N25, N27	584-589	1.0519
- Other and unspecified diseases of genitourinary system	N00-N15, N20-N23, N26, N28-N95	580-583, 590-629	0.7500
Certain conditions originating in the perinatal period	P00-P96	760-771.2, 771.4-779	1.0732

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Table 2 (continued)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH
Cause of Death, ICD-10 Codes, Modified ICD-9 Codes, and Comparability Ratios

CAUSE OF INFANT DEATH	ICD-10 CODES	MODIFIED ICD-9 CODES (MOST COMPARABLE TO ICD-10 CODES)	COMPARABILITY RATIO ¹
- Newborn affected by maternal factors and by complications of pregnancy, labor and delivery	P00-P04	760-763	1.0397
- # Newborn affected by maternal hypertensive disorders	P00.0	760.0	1.0444
- # Newborn affected by other maternal conditions which may be unrelated to present pregnancy	P00.1-P00.9	760.1-760.6, 760.8-760.9	0.8667
- # Newborn affected by maternal complications of pregnancy	P01	761	1.0515
-- Newborn affected by incompetent cervix	P01.0	761.0	1.0444
-- Newborn affected by premature rupture of membranes	P01.1	761.1	1.0363
-- Newborn affected by multiple pregnancy	P01.5	761.5	0.9519
-- Newborn affected by other maternal complications of pregnancy	P01.2-P01.4, P01.6-P01.9	761.2-761.4, 761.6-761.9	1.3220
- # Newborn affected by complications of placenta, cord and membranes membranes	P02	762	1.0223
-- Newborn affected by complications involving placenta	P02.0-P02.3	762.0-762.3	1.0206
-- Newborn affected by complications involving cord	P02.4-P02.6	762.4-762.6	1.1207
-- Newborn affected by chorioamnionitis	P02.7	762.7	1.0115
-- Newborn affected by other and unspecified abnormalities of membranes	P02.8-P02.9	762.8-762.9	NA
- # Newborn affected by other complications of labor and delivery	P03	763.0-763.4, 763.6-763.9	1.3718
- # Newborn affected by noxious influences transmitted via placenta or breast milk	P04	760.7, 763.5	0.7736
- Disorders related to length of gestation and fetal malnutrition	P05-P08	764-766	1.1106
-- # Slow fetal growth and fetal malnutrition	P05	764	1.3182
-- # Disorders related to short gestation and low birth weight, not elsewhere classified	P07	765	1.1082
--- Extremely low birth weight or extreme immaturity	P07.0, P07.2	765.0	1.1037
--- Other low birth weight or preterm	P07.1, P07.3	765.1	1.1217
-- # Disorders related to long gestation and high birth weight	P08	766	NA

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LIST OF 130 SELECTED CAUSES OF INFANT DEATH
Cause of Death, ICD-10 Codes, Modified ICD-9 Codes, and Comparability Ratios

CAUSE OF INFANT DEATH	ICD-10 CODES	MODIFIED ICD-9 CODES (MOST COMPARABLE TO ICD-10 CODES)	COMPARABILITY RATIO ¹
- # Birth trauma	P10-P15	767	0.8589
- # Intrauterine hypoxia and birth asphyxia	P20-P21	768	1.3239
-- Intrauterine hypoxia	P20	768.2-768.4	0.8545
-- Birth asphyxia	P21	768.5-768.9	1.4888
- # Respiratory distress of newborn	P22	769	0.9237
- Other respiratory conditions originating in the perinatal period	P23-P28	770	0.8698
-- # Congenital pneumonia	P23	770.0	3.8750
-- # Neonatal aspiration syndromes	P24	770.1	1.4268
-- # Interstitial emphysema and related conditions originating in the perinatal period	P25	770.2	1.5031
-- # Pulmonary hemorrhage originating in the perinatal period	P26	770.3	1.5333
-- # Chronic respiratory disease originating in the perinatal period	P27	770.7	1.1329
-- # Atelectasis	P28.0-P28.1	770.4-770.5	2.2231
-- All other respiratory conditions originating in the perinatal period	P28.2-P28.9	770.6-770.8	0.1044
- Infections specific to the perinatal period	P35-P39	771.0-771.2, 771.4-771.8	1.1451
-- # Bacterial sepsis of newborn	P36	771.8	0.9853
-- # Omphalitis of newborn with or without mild hemorrhage	P38	771.4	NA
-- All other infections specific to the perinatal period	P35, P37, P39	771.0-771.2, 771.5-771.7	2.7761
- Hemorrhagic and hematological disorders of newborn	P50-P61	772-774, 776	1.3316
-- # Neonatal hemorrhage	P50-P52, P54	772	1.3087
-- # Hemorrhagic disease of newborn	P53	776.0	NA
-- # Hemolytic disease of newborn due to isoimmunization and other perinatal jaundice	P55-P59	773-774	0.6957
-- # Hematological disorders	P60-P61	776.1-776.9	1.6984
-- # Syndrome of infant of a diabetic mother and neonatal diabetes mellitus	P70.0-P70.2	775.0-775.1	NA
- # Necrotizing enterocolitis of newborn	P77	777.5	1.1935

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Table 2 (continued)
LIST OF 130 SELECTED CAUSES OF INFANT DEATH
Cause of Death, ICD-10 Codes, Modified ICD-9 Codes, and Comparability Ratios

CAUSE OF INFANT DEATH	ICD-10 CODES	MODIFIED ICD-9 CODES (MOST COMPARABLE TO ICD-10 CODES)	COMPARABILITY RATIO ¹
- # Hydrops fetalis not due to hemolytic disease	P83.2	778.0	1.0397
- Other perinatal conditions	P29, P70.3-P76, P78-P81, P83.0-P83.1, P83.3-P96	775.2-775.9, 777.0-777.4, 777.6-777.9, 778.1-779	1.2033
# Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99	740-759	0.9280
- Anencephaly and similar malformations	Q00	740	1.0029
- Congenital hydrocephalus	Q03	742.3	0.6621
- Spina bifida	Q05	741	0.8254
- Other congenital malformations of nervous system	Q01-Q02, Q04, Q06-Q07	742.0-742.2, 742.4-742.9	1.0909
- Congenital malformations of heart	Q20-Q24	745-746	1.0136
- Other congenital malformations of circulatory system	Q25-Q28	747	0.6801
- Congenital malformations of respiratory system	Q30-Q34	748	0.6751
- Congenital malformations of digestive system	Q35-Q45	749-751	0.8354
- Congenital malformations of genitourinary system	Q50-Q64	752-753	0.9910
- Congenital malformations and deformations of musculoskeletal system, limbs and integument	Q65-Q85	754-757	0.9580
- Down's syndrome	Q90	758.0	0.9811
- Edward's syndrome	Q91.0-Q91.3	758.2	1.0055
- Patau's syndrome	Q91.4-Q91.7	758.1	0.9549
- Other congenital malformations and deformations	Q10-Q18, Q86-Q89	743-744, 759	0.9794
- Other chromosomal abnormalities, not elsewhere classified	Q92-Q99	758.3-758.9	1.2030
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R99	780-799	1.0213
- # Sudden infant death syndrome	R95	798.0	1.0570
- Other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R53, R55-R94, R96-R99	780-796, 798.1-799	0.8974
All other diseases	F01-F99, H00-H57, L00-M99	290-319, 360-379, 680-739	1.1905

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Cause of Death, ICD-10 Codes, Modified ICD-9 Codes, and Comparability Ratios

CAUSE OF INFANT DEATH	ICD-10 CODES	MODIFIED ICD-9 CODES (MOST COMPARABLE TO ICD-10 CODES)	COMPARABILITY RATIO ¹
External causes of mortality	U01, V01-Y84	E800-E999	0.9981
- # Accidents (unintentional injuries)	V01-X59	E800-E869, E880-E929	1.0229
-- Transport accidents	V01-V99	E800-E848, E920-E929.1	1.0186
--- Motor vehicle accidents	See Footnote 2	E810-E825	0.9766
--- Other and unspecified transport accidents	See Footnote 3	E800-E807, E826-E848, E929.0-E929.1	NA
-- Falls	W00-W19	E880-E888	NA
-- Accidental discharge of firearms	W32-W34	E922	NA
-- Accidental drowning and submersion	W65-W74	E910	1.0175
-- Accidental suffocation and strangulation in bed	W75	E913.0	1.1231
-- Other accidental suffocation and strangulation	W76-W77, W81-W84	E913.1-E913.9	0.8607
-- Accidental inhalation and ingestion of food or other objects causing obstruction of respiratory tract	W78-W80	E911-E912	1.1385
-- Accidents caused by exposure to smoke, fire and flames	X00-X09	E890-E899	0.9811
-- Accidental poisoning and exposure to noxious substances	X40-X49	E850-E869, E924.1	NA
-- Other and unspecified accidents	W20-W31, W35-W64, W85-W99, X10-X39, X50-X59	E900-E909, E914-E921, E923-E924.0, E924.8-E929	1.0270
- # Assault (homicide)	U01, X85-Y09, Y87.1	E960-E969	1.0000
-- Assault (homicide) by hanging, strangulation and suffocation	X91	E963	1.1667
-- Assault (homicide) by discharge of firearms	U01.4, X93-X95	E965.0-E965.4	NA
-- Neglect, abandonment and other maltreatment syndromes	Y06-Y07	E967, E968.4	0.9554
-- Assault (homicide) by other and unspecified means	U01.0-U01.3, U01.5-U01.9, X85-X90, X92, X96-X99, Y00-Y05, Y08-Y09	E960-E962, E964, E965.5-E966, E968.0-E968.3, E968.8-E968.9	1.0067
- # Complications of medical and surgical care	Y40-Y84	E870-E879, E930-E949	NA
- Other external causes	X60-X84, Y10-Y36	E970-E979	0.8947

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2. ICD-10 codes - Motor vehicle accidents: V02-V04, V09.0, V09.2,V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2.

3. ICD-10 codes - Other and unspecified transport accidents: V01, V05-V06, V09.1, V09.3-V09.9, V10-V11, V15-V18, V19.3, V19.8, V19.9, V80.0-V80.2, V80.6-V80.9, V81.2-V81.9, V82.2-V82.9, V87.9, V88.9, V89.1, V89.3, V89.9, V90-V99.

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[Return to Main Table of Contents for 2003 Annual Report](#)